

ASR Program Key to Water Resources Management

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ABSTRACT

Chandler, Arizona is one of the fastest growing communities in the United States among cities with populations over 150,000. Location is a major factor in Chandler's prosperity, offering many advantages to existing and new businesses and industries, with a reputation as a global leader in technology. Projected build out population estimates range from 280,000 to 290,000, which could occur in the next 15 years.

From a water resources stand point, Chandler manages 100 percent of its reclaimed water through exchange, recharge and recovery, and direct reuse. At build out Chandler is expected to produce 32,500 acre-feet/year (AF/yr) of reclaimed water, of which 15,700 AF/yr is dedicated to exchange and 16,800 AF/yr to direct reuse and recharge and recovery. To help manage its reclaimed water supply, Chandler began developing two Aquifer Storage and Recovery (ASR) project sites in 1996, namely the Tumbleweed Park and Ocotillo ASR sites. The ASR wells are intended to provide:

- Storage of excess reclaimed water during periods of low direct reuse
- Recovery of stored water during peak demand periods
- 100% back up recharge capacity for periods of no use or emergency conditions.

This paper will present the following regarding Chandler's recharge program:

1. Historical development and operation of the ASR wells
2. ASR well construction overview
3. Historical recharge rates/volumes
4. Costs of the existing ASR well program
5. Future ASR well development
6. How site development and operational challenges were overcome

The Tumbleweed Park recharge site currently has seven ASR wells each with recharge rates ranging from 700 -1,600 gpm. The cumulative volume recharged at the site to date totals 39,700 acre-feet. It is anticipated that ultimately the site will contain up to ten recharge wells, with an average site recharge capacity of 10 mgd, and a peak rate of 20 mgd.

The Ocotillo recharge site currently has four operational ASR wells each with a recharge rate of 1,000 gpm. The cumulative volume recharged at the site to date totals 5,300 acre-feet. It is anticipated that ultimately the site will contain up to eight recharge wells, with an average site recharge capacity of 10 mgd, and a peak rate of 20 mgd.